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ABSTRACT

One of the greatest problems that has confronted the physical education profession is that of evaluating sport skill tests and their relationship to successful performance. This study was thus undertaken to investigate the relationship of basketball skill tests and player biographic data to success in playing basketball. Ninety-four subjects ages 11-13 attending a summer basketball school were administered the following four basketball skill tests: the front shot, jump and reach, the dribble test (all selected from the American Alliance for Health, Physical Education and Recreation Sport Skill Test Manual), and free throws. Biographic data of age, weight, and height were also obtained. Subjects were rated either as successful or average players. Success at the jump shot and reach and the dribble test were found to correlate with player ability. Age and height factors also determined player success. (CD)

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DISCRIMINANT ANALYSIS OF BASKETBALL SKILL TESTS AND BIOGRAPHIC DATA

One of the greatest problems that has confronted the physical education profession is that of evaluating sport skill tests and their relationship to successful performance. The purpose of this study was to investigate the relationship of basketball skill tests and player biographic data to success in playing basketball.

Ninety-four subjects ranging in age from 11 to 18 attending the 1974 University of Minnesota, Duluth summer basketball school were administered four basketball skill tests. The front shot, jump and reach, and the dribble test were selected from the AAHPE&R Sports Skill Test Manual. Subjects also attempted 135 free-throws during the six day summer camp. Biographic data of age, weight and height were obtained from registration material.

Criterion groups were established by designating All-Star selection (N=40) as successful basketball players and the remaining as average (N=54) participants. The subjects were rated by four college coaches and three high school coaches. These ratings were the basis for selection to the all-star team.

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Raw scores of the four basketball skill tests and three biographic traits were analyzed by the Multiple Discriminant Stepwise Analysis statistical procedure. This procedure attempted to identify the factors which tended to contribute most heavily to discriminating between the all-star selections and the remaining basketball campers.

The statistical procedure revealed four variables that significantly discriminated between group membership. The leading predictor of group membership was the jump and reach skill test. Biographic factors of age and height were then identified followed by the dribble skill test. The remaining now significant factors contributed to group membership in the following order: free-throw shooting skill, weight and the front shot skill test. The stepwise multiple discriminant regression equation helped reclassify 30 of 40 All-Star players and 38 of 54 non All-Star correctly back into their respective groupings. Approximately 72% of the time, the regression equation properly reclassified the UMD basketball school participants.

Within the limitation of this study, the following conclusions are stated:

1) Two of the selected basketball skill tests developed through the AAHPE&R Sport Skills Test Project discriminant between successful and average basketball

participants. The tests are the jump and reach and dribble test.

2) Age and height likewise discriminant between successful and average basketball players attending the 1974 UMD summer basketball school.

Discriminant Analysis of Basketball
Skill Tests and Biographic Data (Ages 11-18)

Table 1 Means, Standard Deviations, and Grand Means of the 7 factors for all-star selections and non all-star members of UMD summer basketball camp.

Factors	All-Stars N=40		Non All-Stars N=54		
	$\bar{X}$	sd	$\bar{X}$	sd	Grand $\bar{X}$
1. Height	69.8	5.1	67.6	5.6	68.5
2. Front Shot	7.8	2.5	6.9	2.6	7.3
3. Vertical Jump	21.9	3.5	19.8	4.0	20.7
4. Dribble	97.6	10.4	103.6	15.6	101.1
5. Free Throw	88.1	15.3	79.9	18.1	83.4
6. Age	14.1	2.0	14.2	2.0	14.2
7. Weight	141.8	30.4	133.1	32.6	136.8

Table 2 Summary of the stepwise multiple discriminant analysis comparing all-star and non all-star players in UMD summer basketball camp.

Step No.	Variable Entered	F-Test *	Degrees of Freedom
1	Vertical Jump	724631.9	1,90
2	Age	130.6	2,89
3	Height	26.4	3,88
4	Dribble	19.4	4,87
5	Free Throw	4.1	5,86
6	Weight	1.6	6,85
7	Front Shot	.63	7,84

* F - Level of inclusion or deletion .5